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Precision of Shooting (6.75m) in University Women's Basketball

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Abstract

Basketball is a game with a broad impact among male and female students in Romania. Therefore, particular attention should be paid to its development in order to achieve high performance in both national and international academic competitions. The use of appropriate exercises for precision development in shooting from a distance of 6.75 m as part of the university teams' training program may lead to higher efficiency and shorter execution times. Given the volume, intensity and complexity of effort in domestic and international official games, we were compelled to identify more efficient training methods for female students in order to improve team results.

Keywords: shooting, basketball, development, universities;

1. Introduction

Basketball is a game with a broad impact among male and female students in Romania. Therefore, particular attention should be paid to its development in order to achieve high performance in both national and international academic competitions.

This experimental study has attempted to approach shooting precision from a distance of 6.75 m in university women's basketball from a new methodological perspective. The study was conducted during two academic years: 2010-2011 and 2011-2012. During the throwing test from 6.75m we have monitored two parameters: execution time and shooting precision (calculated as a percentage).

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2. Purpose

The study is aimed at developing shooting precision from 6.75 m and improving execution time among university basketball team players.

3. Hypothesis

Developing and applying appropriate exercises for developing shooting precision from a distance of 6.75 m as part of the training program of university teams may lead to greater precision and improved execution times.

4. Research methods

Bibliographic research, observation, experiments, statistical and mathematical methods.

5. Subjects

The experimental study has involved members of the university women's basketball team during two academic years: 2010-2011 and 2011-2012.

6. Content of the experiment

A quick basketball player moves smoothly, explosively and effortlessly on the court. Speed is essential, but it is also important for players to know when to use it.

Speeding up movement is not easy, but players can become more efficient and explosive in their movements through appropriate practice. This can be achieved by dividing an action into segments and practicing each of those segments separately. When the segments are then joined together, performance is much improved. Practicing each part of the whole movement can increase force, while eliminating weak points (N.B.C.C.A., 1997).

"The manifestation of skill is conditioned by the processes of maturation, particularly of the player's nervous system, and the number of motor skills the player has. After early childhood, subjects have a set of basic and applied motor skills (walking, running, jumping, throwing, catching, pushing, climbing and so on). In this phase, cognitive and motor capabilities are mutually supportive." (apud Meinal, quoted by Manno,1996).

In our initial test (*Table 1; Fig. 1)* we found that players performed poorly in their shooting precision from 6.75 m. During training sessions we found that there was sometimes a mismatch between the content of the training and the requirements of the competitions they played in. Students did not train well enough for the volume, intensity and complexity of effort required during games (Netolitzchi, 2008).

In order to provide appropriate training to the members of the Bucharest Polytechnical University women's basketball team, we have developed new methods and appropriate systems to improve speed and develop the basic motor abilities that could contribute to a great extent to improving shooting precision from a distance of 6.75 m. We have conducted our experiment based on a new program we have developed (Netolitzchi, 2009).

Our test consisted in 10 throws from two predetermined positions. The test involved two players. Two chairs were placed in the predetermined positions: the player to be tested stood next to one of the two shooting points - then received a pass and threw the ball to basket - then sprinted to the second point and threw to basket again. Each player performs five throws from two positions. In our research we monitored execution time and precision (in percentage points) of the throws from 6.75 m (Netolitzchi, 2008).

We have devised a number of specific exercises for developing speed and skill in order to improve shooting precision (after N.B.C.C.A. 1997): lying on the floor with shoulders flat, knees bent to the left, palms under the head (head or neck should not be lifted during the exercise), raise trunk and maintain position until you count to

two.

Execute a complete series, then repeat exercise on the opposite side, start from basic defense position, footwork - at whistle signal, sprint 5 m - (5x); passive break. From the standing position - at whistle signal, sprint 10 m (5x), passive break. From the starting position down - at whistle signal, sprint 15 m (5x); passive break. From the basic defense position, footwork - at whistle signal, sprint 20 m (5x); passive break. Footwork - at whistle signal, sprint 5 m - stop - lateral movement to the left, low basic defense position (5 m) come back - sprint 4 m (10x);

From the basic defense position, sprint to 6.75 m - stop - move back with a step and slide movement left and right to the bottom line - stop - sprint to the center - stop – move back to 6,75 m – stop - sprint to the bottom line on the opposite side (6x) return; walk breathing deeply, stretch.

6. Results

Table 1. Accuracy and execution time

Tests		Initial test		Control testing		Control testing		Final test	
No.	Name	2010 - 2011				2011 - 2012			
		Preparatory season		Competition season		Preparatory season		Competition season	
	Shooting guards								
1	B.A.	31”	10/6	30”	10/6	30”	10/5	29”	10/6
2	D.I.	35”	10/5	33”	10/5	33”	10/5	33”	10/6
3	C.S.	43”	10/2	38”	10/3	38”	10/4	38”	10/5
4	M.C.	32”	10/5	32”	10/6	32”	10/6	30”	10/6
	Forwards								
5	T.A.	40”	10/8	38”	10/8	38”	10/7	37”	10/8
6	C.L.	30”	10/6	30”	10/7	30”	10/6	28”	10/7
7	M.A.	37”	10/6	35”	10/6	35”	10/5	35”	10/7
8	B.A.	35”	10/5	34”	10/7	34”	10/6	32”	10/7
	Center								
9	G.A.	39”	10/4	37”	10/6	36”	10/5	36”	10/6
10	G.F.	38”	10/5	35”	10/5	35”	10/5	34”	10/5
11	B.C.	40”	10/6	39”	10/7	39”	10/6	38”	10/7
12	M.C.	43”	10/4	40”	10/6	40”	10/5	39”	10/4

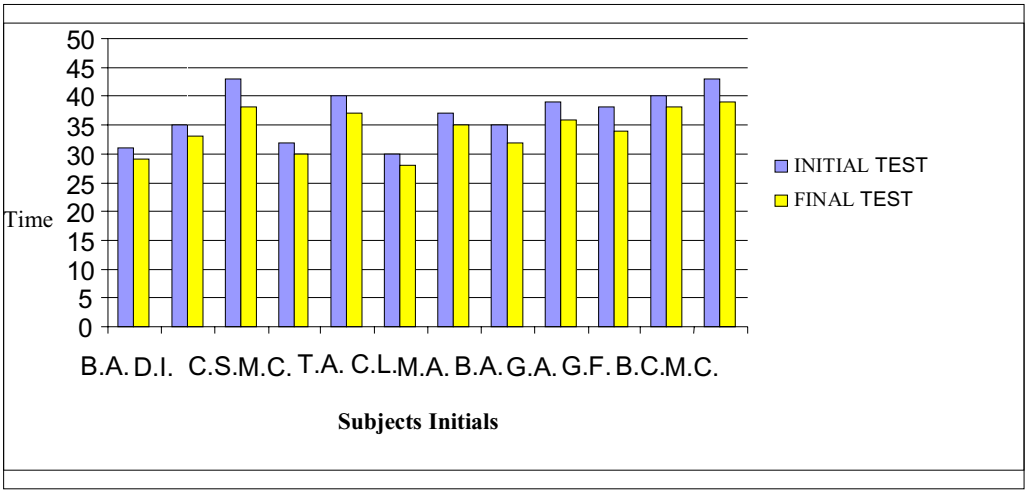

Fig. 1. Accuracy and execution time

Table 2. Execution time

Arithmetic mean		Standard deviation		Variation coefficient		Student Test "t"	Correlation coefficient
Initial Test	Final Test	Initial Test	Final Test	Initial Test	Final Test	9.53	0.98
36.92	34.08	4.4	3.6	11.8	10.7		

Table 3. Shooting precision

Arithmetic mean		Standard deviation		Variation coefficient		Student Test "t"	Correlation coefficient
Initial Test	Final Test	Initial Test	Final Test	Initial Test	Final Test	3.63	0.77
0.52	0.62	0.2	0.1	35.8	17.6		

The specific shooting test from 6.75 m, applied during the preparatory seasib in 2010-2011, correlated with the same test, applied during the competition season in 2011-2012, shows that (*Tables 2, 3*): the arithmetic mean for the throwing precision in percentage points is 52% and the standard deviation is 0.2 for the initial test, while for the final test the arithmetic mean is 62% and the standard deviation is 0.1.

The arithmetic mean for shooting execution time is 36.92 and the standard deviation is 4.4 for the initial test, while for the final test the arithmetic mean is 34.08 and the standard deviation is 3.6.

The variation coefficient (in percentage points) in the first case is 35.8%, while in the second it is 17.6%. This shows that the group, in the first case, is homogeneous (variation over 20%) while in the second case it is relatively homogeneous (variation under 20%).

The variation coefficient for execution time in the first case is 11.8%, while in the second it is 10.7%. This indicates that this group is relatively homogeneous, variation being over 10%.

If we calculate the student test "t" in order to check the null hypothesis for shooting precision, we obtain a value of 3.63 for "t". Comparing it with the value in the Fisher table for a 0.01 significance level and a frequency of the selected sample of n-1, we find that the calculated value of "t" is higher than the value of "t" in the table. We can claim that the difference is significant, therefore the null hypothesis is rejected.

If we calculate the student test "t" in order to check the null hypothesis for execution time, we obtain a value of 9.53 for "t". Comparing it with the value in the Fisher table for a 0.01 significance level and a frequency of the selected sample of n-1, we find that the calculated value of "t" is higher than the value of "t" in the table.

7. Conclusions

As a result of the study we have carried out we can draw the following conclusions:

- The introduction of an appropriate operational system in the training of basketball players has led to a positive development in their shooting precision from 6.75 m. The specific tests have shown a significant improvement both in precision and in the execution time of throws;
- Results have shown that most female students improved their throwing precision from 6.75 m;
- Practicing various techniques in an organized manner under the guidance of basketball specialists can lead to the development of specific qualities required for basketball, such as an improved shooting precision from a distance.

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